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TRAFFIC SURVEY of Missoula

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A TRAFFIC SURVEY

OF

MISSOULA MONTANA

CONDUCTED BY THE

MONTANA HIGHWAY DEPARTMENT

HIGHWAY PLANNING SURVEY

IN COOPERATION WITH

THE

PUBLIC ROADS ADMINISTRATION

FEDERAL WORKS AGENCY

THE

CITY OF MISSOULA

AND

MISSOULA COUNTY

Survey Conducted August, 1947
Report Submitted June, 1948

July 2, 1948

Mr. Scott P. Hart
State Highway Engineer
Montana Highway Commission
Helena, Montana

Dear Mr. Hart:

Complying with the instructions received from the Montana State Highway Commission, we have completed the Origin-Destination and traffic study to determine the present and future needs of the City of Missoula, and are transmitting herewith our findings and recommendations.

The purpose of this report is to furnish factual traffic data which can be used in making decisions in solving Missoula's traffic problems, rather than to recommend definite steps to be taken at this time. However, our conclusions may be found on page 7 of the report. Missoula is perhaps the only city of any size in the State which is almost equally divided into business and residential areas by a large river flowing between. The city is of sufficient size so that the majority of people drive back and forth to work, which creates heavy traffic across the three bridges that now connect the two sections of the city. The bridges at the present time do not form a bottleneck for traffic, but the approaches to the Higgins Avenue bridge are congested, due to the present use of the parking facilities and to the control of traffic by signals near each end of the bridge. As the city continues to grow these conditions will become more pronounced and it will be necessary for the city to take steps to rectify them.

I would like to call to your attention that this report includes only a very small portion of the data that were collected and analyzed. These many details, consisting of tabulations, preliminary charts, estimates and maps, are available in this office for inspection.

We wish to express our appreciation and thanks for the assistance and cooperation given us by Mayor Gregory of the City of Missoula, Mr. Charles G. Riggs, City Engineer, and Mr. O. B. Parsons, Chairman, and the Board of County Commissioners.

A special staff has been at work for several months intensively correlating information and bringing the study to completion. Mr. Paul R. DeVine coordinated the work of the staff and had the principal responsibility of collecting the data.

In conclusion we wish to express our thanks to the hundreds of motor vehicle owners and highway users in Montana, whose cooperation has made possible the compilation of much of the basic data used in this report.

Yours very truly,

MONTANA HIGHWAY COMMISSION

By: M. J. Steere

M. J. Steere, Planning Survey Director

DEFINITIONS OF TRAFFIC TERMS USED IN THIS REPORT

Origin & Destination Survey	A survey of travel concerned with the locations where trips begin and end and the types of vehicles used.
Origin	The location where a trip begins.
Destination	The location where a trip ends.
External Survey	A type of Origin & Destination Survey wherein trip information is gathered by interviewing drivers at stations located near the city limits on all important highways entering the city.
External Traffic	That traffic which has either its Origin or Destination outside of the city.
Central Business District	That portion of the city which includes the main shopping and business establishments.
Trip	The one way travel from a point of Origin to a point of Destination.
Through Traffic	Those vehicles which did not stop in the city or stopped only for gasoline, food, or cold drinks.

SUMMARY

The purpose of this report is to furnish factual traffic data to be used in making decisions in solving Missoula's traffic problems rather than to recommend definite solutions to those problems. Keeping this fact in mind, we wish to briefly discuss the general traffic situation in Missoula and to point out some of the more feasible solutions to the city's future traffic problems.

Missoula is perhaps the only city of any size in the State which is almost equally divided into business and residential areas by a sizeable river flowing from East to West. The city is large enough so that the majority of the people drive to work, and also small enough so that these same workers are able to drive home for lunch. This system of commuting across the river has a tendency to create a large volume of traffic over the two main bridges especially during the peak hours of twelve to one and five to six P. M.

The Average Daily Traffic for 1947 over the Higgins Avenue bridge was 10,805 vehicles. Traffic volumes of over 13,000 vehicles per day with peak hours nearing 1,200 vehicles have been observed on this bridge during the survey and we estimate that the thirtieth maximum hour will approach 1,500 vehicles at the present time. Therefore, we believe that the thirty-foot roadway is nearing its practical capacity for two lanes of traffic.

The Orange Street bridge located to the West of Higgins Avenue is a comparatively new structure built by the Montana Highway Department in 1936. This bridge now carries an Average Daily Traffic of 9,821 vehicles with a maximum observed day of 11,300 vehicles. The maximum observed hour on this bridge was 1,028 vehicles and we estimate that the thirtieth maximum hour is approximately 1,350 vehicles. This bridge also is carrying two lanes of traffic over a thirty-foot roadway at the present time.

It is quite obvious that if the city continues to expand to the South in the next twenty years at the same rate as during the past ten years something will have to be done to increase the carrying capacities of the two bridges serving the business district or a new bridge will have to be constructed to help carry the load. However, at the present time we believe that the bottleneck on Higgins Avenue is not so much the bridge as it is the street approaches to the bridge. The traffic on both sides of the river can be speeded up by the proper synchronization of the traffic lights and by changing to parallel parking.

Missoula is quite fortunate in having comparatively wide streets in the business district. Higgins Avenue is sixty-six feet wide between curbs on the North side of the river and fifty-six feet wide on the South. Angle parking is being practiced on both sides of the street at the present time. By prohibiting parking from the bridge North to Front Street and changing to parallel parking from Front Street to Broadway on Higgins Avenue, we feel that the actual bridge capacity will be increased and the forty-eight feet of street left after parallel parking has been instituted could eventually handle four lanes of traffic if necessary.

The fifty-six feet between curbs on the South could handle four lanes from the bridge to Brooks Street by changing to parallel parking on the West side and prohibiting parking on the East. Left turns should be eliminated at the intersection of Third Street South, and Higgins Avenue and also at the junction with the ramp to the Milwaukee depot just South of the bridge.

Four lanes of traffic on Higgins Avenue from Brooks Street to Broadway will be of little value however, if they bottleneck to two lanes over the bridge and we do not advocate four lanes unless the bridge is widened.

Some study has been given to the feasability of widening the Higgins Avenue bridge. It seems that the present bridge is longer than is necessary to handle the river and that it would be practicable to shorten and widen the structure.

The Clark Fork of the Columbia river divides into two channels just East of Higgins Avenue creating a sizeable island. A suitable retaining fill could be constructed beginning at a point where the river splits East of the bridge and continuing downstream as far as is necessary to confine the river to the South channel. If the river is confined the bridge length can be reduced by approximately five hundred feet. The length of the present structure is 1,022 feet so a considerable saving in length could be effected by constructing this retaining fill.

The present bridge is a plate girder structure and it is considered feasible to salvage the girders on the North half and use them again in widening the South half thus making a substantial saving on steel. Sidewalks on both sides are supported by brackets on the outside of the girders and these brackets could also be salvaged and used again.

Some very valuable land could be reclaimed in the central business district of the city by reducing the bridge length. The area to the North of the South channel could be used for future business expansion or as a parking lot in the downtown area.

An alternate solution to the city's bridge problem would be to build a new two-lane structure over the river and the Milwaukee railroad at a site between Higgins Avenue and Van Buren Street. Our external survey indicates that the Van Buren Street bridge is too far to the East of the business district to favor the majority of the people who are forced to cross the river but a further internal study of the local traffic will be needed to decide upon a definite bridge site in this area.

A possible site for this proposed bridge would connect Madison Street on the North with Arthur Street on the South and would serve the residential area as well as the University of Montana. The necessary right-of-way should not be too expensive to acquire as the one block adjacent to the river on the North which the street extension would have to cut through is very sparsely built up.

No comparison of the costs of the two proposals is available but our bridge engineers are confident that the Higgins Avenue bridge can be shortened and widened at considerably less expense than building a new structure.

Another traffic problem is the large number of trucks that are now forced to use Broadway through the city or in reaching their destinations in the warehouse district near the Northern Pacific Depot. These heavy vehicles on U. S. #10 slow down the traffic and cause considerable confusion and congestion near the intersection of Higgins Avenue and Broadway.

At very little expense Spruce Street can be extended East over Rattlesnake Creek to a junction with U. S. #10 near the East city limits. This extension would provide a by-pass for through trucks and a suitable access route for those trucks bound for either the warehouse or business districts. Our Origin And Destination Survey shows that approximately six hundred trucks per day could use all or part of a by-pass in this location.

Traffic on Higgins Avenue at the present time is composed of approximately ten percent commercial vehicles; or in other words over one thousand trucks per day use the bridge. A large portion of these trucks of course are light panels and pick-ups, but we have observed heavily loaded combinations using this bridge consistently during the survey.

These medium and heavy trucks that are now allowed to cross Higgins Avenue bridge decrease its carrying capacity by as much as ten percent during peak hours and if they were forced to use the Orange Street Bridge, Higgins Avenue would be relieved of a large part of its present congestion.

A very satisfactory North and South truck route exists at the present time beginning at the intersection of U. S. #93 and Middlesex Avenue South of the city and continuing North across the river via Stephens and Orange Streets. At the time of our survey these streets were not marked either as a truck route or an alternate to the central business district and U. S. #10. We suggest that suitable markings be placed on U. S. #93 on the South and U. S. #10 on the North to identify this route as a by-pass and truck route and that the proper action be taken to force all trucks larger than pick-ups and light panels to cross the river on the Orange Street Bridge.

DESCRIPTION OF SURVEY

Missoula, a city of approximately 20,000, is one of the most important commercial centers in the State of Montana. Distribution of manufactured products to a large agriculture area is the main function of the city. The Chamber of Commerce boasts of serving as a trading center for 100,000 people and in fact it is the only city over 10,000 within a radius of one hundred miles.

The most important manufactured product is lumber. Many mills of the various companies provide year around employment and various business opportunities. Smaller plants take advantage of the abundance of timber to manufacture such articles as doors, windows and cabinets, and market their western pine products over the United States.

Farming adds to the wealth of the community and many of the fruits of the surrounding territory command the highest prices on eastern markets. Harvesting such crops as cherries, apples and strawberries create employment and the cultivating of sugar beets and the refining of sugar all tend to make a thriving and prosperous community.

The livestock industry finds this area favorable due to the mild winter seasons combined with a summer range on the near by Forest Reserves.

Recreational facilities are numerous. Many small lakes provide boating and fishing for the tourists and local population. Dude ranches offer a variety of entertainment for their guests and hunters flock to this area to take advantage of the abundance of game.

Large governmental institutions such as the Forest Service Regional Office, the University of Montana and a United States Army facility provide economic security to their employees.

All such activities generate traffic and Missoula finds herself faced with solving traffic problems common to most all cities of any size where the existing primary street facilities are carrying traffic near their capacity and where their capacity is restricted by angle parking at both curbs. Two United States highways which have their junction in the central business district add further to the citie's problem.

Consequently in October of 1946 the Montana Highway Commission was requested by the city of Missoula to conduct a traffic survey to determine the city's future traffic requirements. Arrangements were made where by part of the cost of the field work was to be shared by both the city and the county and some preliminary density counts were taken in November of 1946. In August of 1947 traffic counting in the city was resumed and plans were formulated to operate three external Origin And Destination Stations.

Manual classification and density counts were taken at one hundred and eighty-seven stations within the city for periods ranging from eight to twenty-four hours on weekdays. Five of these stations were counted for a twenty-four hour period on a weekday, a Saturday and a Sunday.

While manual counts were being taken within the city, three external Origin and Destination Stations were operated on the three main highways entering Missoula as follows:

Station 1 - On U. S. Highway 10 East of Missoula

Station 2 - On U. S. Highway 10 & 93 West of Missoula

Station 3 - On U. S. Highway 93 South of Missoula

All three stations were operated for one twenty-four hour period on weekdays and the eight hour periods of operation at each station were rotated on three different days to obtain a more accurate sample of the traffic movements.

All traffic leaving the city was stopped and drivers interviewed concerning the Origin and Destination of each trip. The type of data collected from each driver was as follows:

1. Montana or Foreign
2. Type of Vehicle
3. Body type
4. Origin and Destination of trip
5. Highway used in entering the city
6. Bridge used by trucks crossing the river

The Origin and Destination Survey began on August 5, and ended August 26, 1947. During the time the survey was in progress 12,067 vehicles, both entering and leaving the city were counted at the three stations.

Of these 12,067 vehicles, 39.7 percent were interviewed. The 4,631 interviews represent 78.45 percent of all traffic leaving the city during the hours that the stations were in operation.

Directional classification counts were taken manually at each station for a twenty-four hour period, while the survey was being conducted. These counts were used in developing the factors that were applied to the interviews to expand them to a twenty-four hour average.

During November of 1947 an inventory was made of all the streets in the city. Type of pavement, curb to curb widths, and the length was noted on all streets in use within the city limits and the immediate urban areas. Since that time a tabulation has been made as to the length of each width and type of pavement and the total number of miles of existing city streets.

HISTORY OF MISSOULA

Missoula traces its history back to 1865 when the first small group of pioneers settled at the junction of Rattlesnake Creek and the Clark's Fork of the Columbia River. Its ideal location made Missoula the natural site for the trading center of northwestern Montana. Located at the hub of four valleys, the Bitterroot, Blackfoot, Clark's Fork of the Columbia, and the Flathead, Missoula soon became a market and trading center for the increasing number of settlers in this region.

By the time the Northern Pacific reached Missoula in 1883 it was already a thriving community. The coming of the first transcontinental railroad brought a new wave of settlers and with them increased opportunites and importance for the city. The designation of Missoula as a division point for the railroad added a large new source of employment.

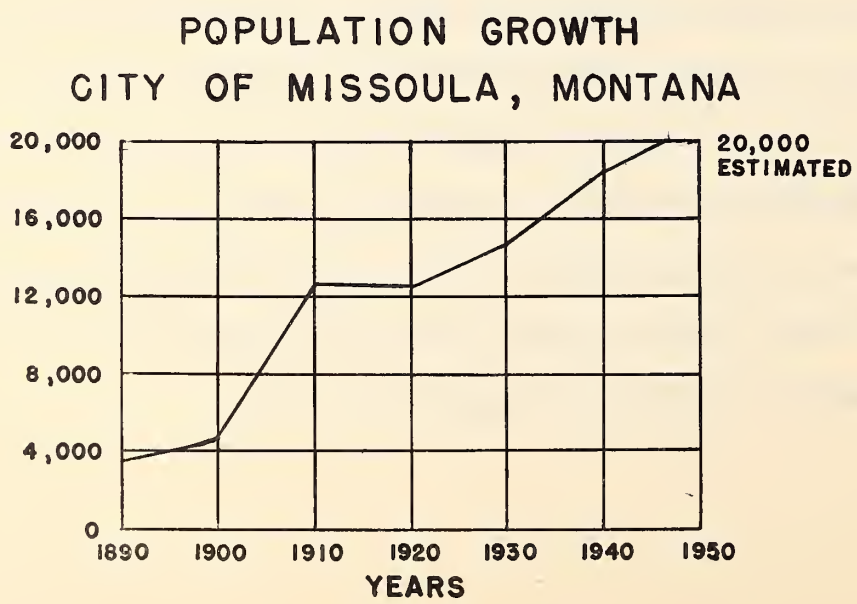
In 1895 the State Legislature designated the town as the site of Montana State University, and since that date the University has gradually been taking a larger place in the city's economy. About thirty-two hundred students now attend the University, and a large portion of Missoula's business is devoted to serving these students.

The Chicago, Milwaukee, and St. Paul railroad became Missoula's second transcontinental line in 1908, and since that time two bus companies and an airline have been added to make Missoula an important transportation center.

Located as it is in a large, fertile, prosperous agricultural region, it is natural that Missoula should develop as a market center. In recent years newly constructed canning and sugar refining plants have pointed to the possibilities of future industrial expansion.

The unusually mild climate and beautiful scenery in the region around Missoula also afford ample opportunities to develop the city as a tourist and recreational center. In the past few years efforts have been made along this line and prospects for the future seem bright.

Through the years Missoula has been characterized by a conservative development, slow but steady. The city is not dependent upon any single factor for its existence, and its whole economy has a very sound basis. In all probability it will continue its growth and development. Population increases since the earliest census is shown graphically below:



VICINITY MAP

AND

TRAFFIC CHARTS

VICINITY MAP

Plate 1 shows the location of the proposed Spruce Street Extension and the relative location of the main highways entering Missoula.

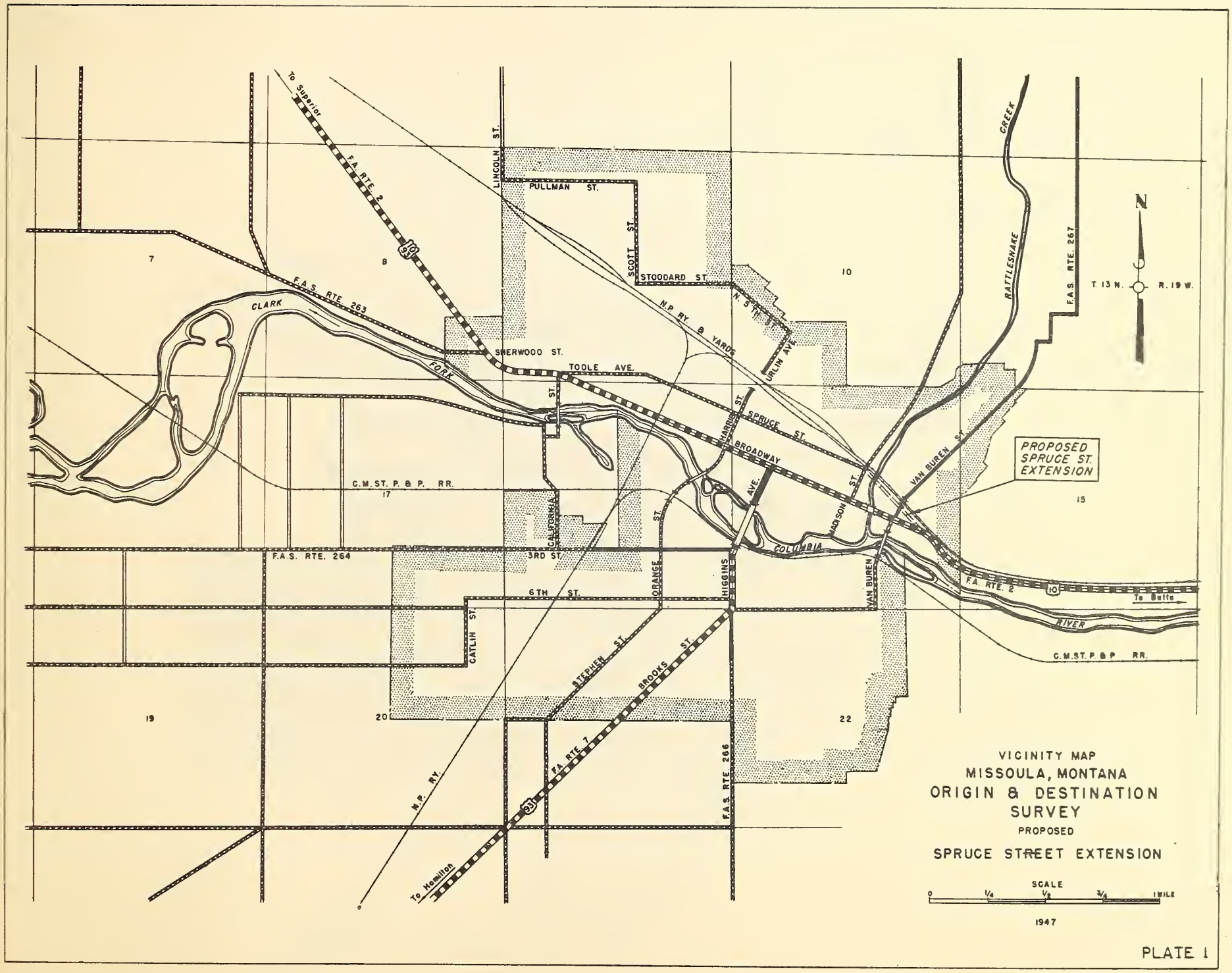

To Superior
F.A. RTE. 2
LINCOLN ST.
PULLMAN ST.
SCOTT ST.
STOODARD ST.
N. 5TH ST.
URLIN AVE.
M.P. RY. & YARDS
CREEK
RATTLESNAKE
F.A.S. RTE. 267
T. 13 N.
R. 19 W.
N
7
8
10
F.A.S. RTE. 263
CLARK
FORK
SHERWOOD ST.
TOOLE AVE.
ST.
HARRISON ST.
SPRUCE ST.
BROADWAY
AVE.
MADSON ST.
VAN BUREN ST.
PROPOSED SPRUCE ST. EXTENSION
C.M.ST.P.&P. RR.
17
15
CALIFORNIA
ST.
COLUMBIA
F.A.S. RTE. 264
3RD ST.
ORANGE
HIGGINS
VAN BUREN
F.A. RTE. 2
To Butte
6TH ST.
RIVER
CATLIN ST.
STEPHEN ST.
BROOKS ST.
C.M.ST.P.&P. RR.
19
20
22
M.P. RY.
F.A. RTE. 7
F.A.S. RTE. 266
To Hamilton
VICINITY MAP
MISSOULA, MONTANA
ORIGIN & DESTINATION
SURVEY
PROPOSED
SPRUCE STREET EXTENSION
SCALE
0
1/4
1/2
3/4
1 MILE
1947

PLATE 1

1947 TRAFFIC VOLUMES

Plate 2 shows the traffic volumes on the streets of Missoula and was prepared from manual counts taken in November, 1946 and August, 1947. All figures shown represent an annual 24-hour average for 1947.

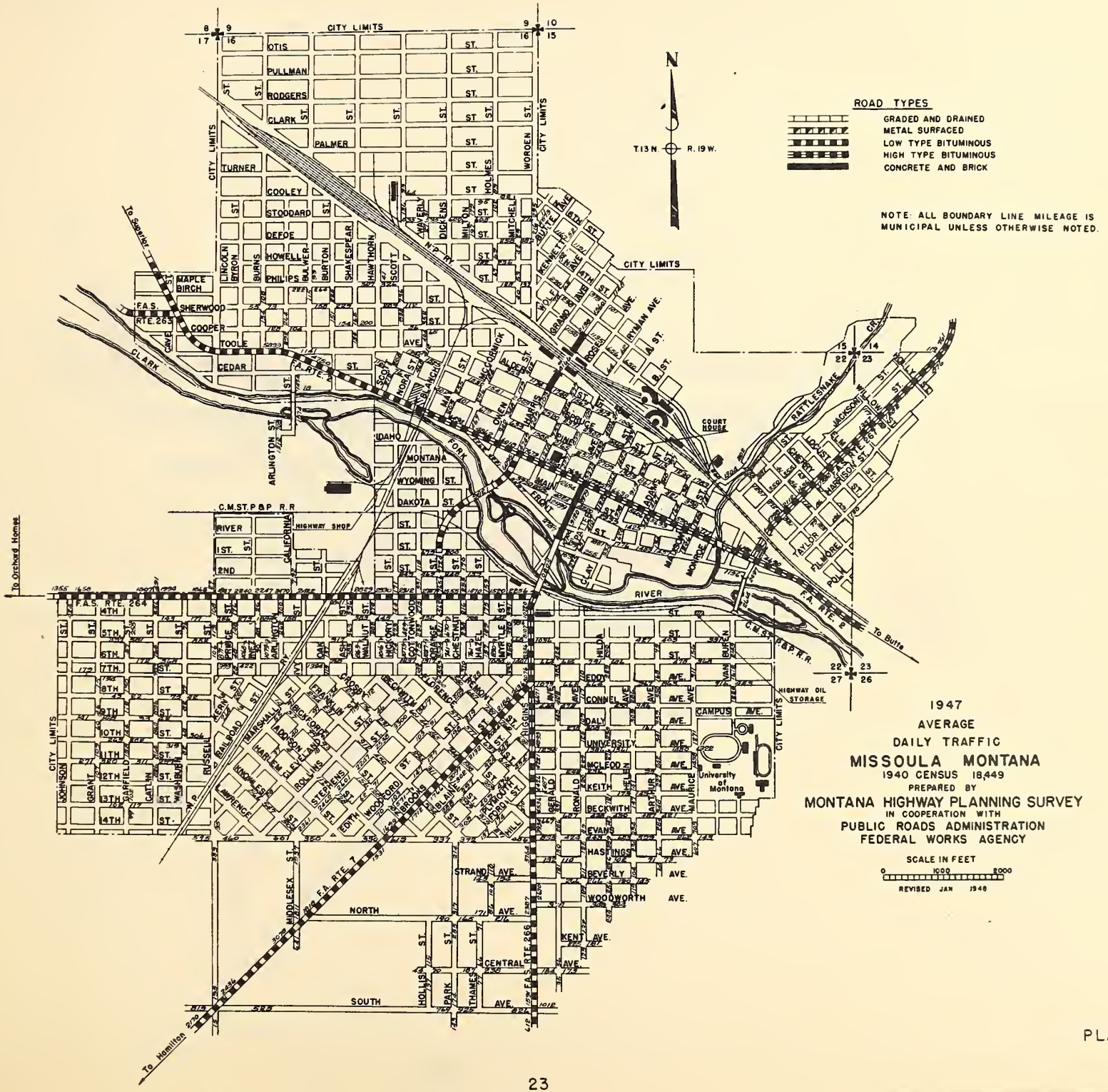

ROAD TYPES
GRADED AND DRAINED
METAL SURFACED
LOW TYPE BITUMINOUS
HIGH TYPE BITUMINOUS
CONCRETE AND BRICK
NOTE: ALL BOUNDARY LINE MILEAGE IS MUNICIPAL UNLESS OTHERWISE NOTED.
N
T.13 N. R.19 W.
CITY LIMITS
To Superior
To Orchard Homes
To Butte
To Hamilton
C.M.ST.P.&P. R.R.
N.P. RY.
HIGHWAY SHOP
HIGHWAY OIL STORAGE
COURT HOUSE
University of Montana
F.A.S. RTE. 264
F.A. RTE. 7
F.A. RTE. 2
F.A.S. RTE. 266
1947
AVERAGE
DAILY TRAFFIC
MISSOULA MONTANA
1940 CENSUS 18,449
PREPARED BY
MONTANA HIGHWAY PLANNING SURVEY
IN COOPERATION WITH
PUBLIC ROADS ADMINISTRATION
FEDERAL WORKS AGENCY
SCALE IN FEET
0 1000 2000
REVISED JAN 1948

PLATE 2

TOTAL TRAFFIC ON PRINCIPAL ROUTES

Plate 3 illustrates the traffic volumes on the principal streets of Missoula and includes both external and internal traffic. The data used in the preparation of this map were obtained from traffic counts taken in August, 1947. The counts have been expanded to a twenty-four hour annual average for the year.

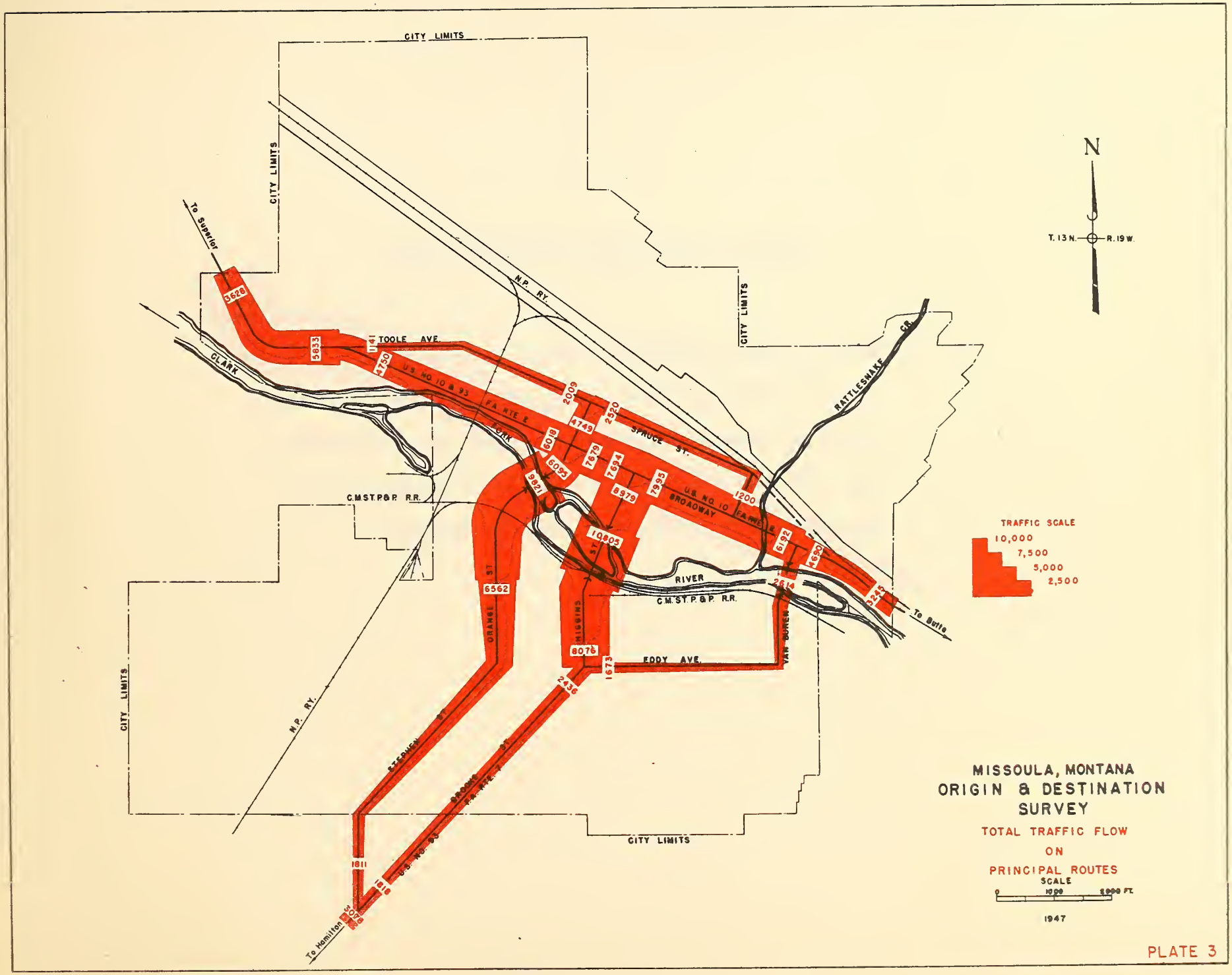
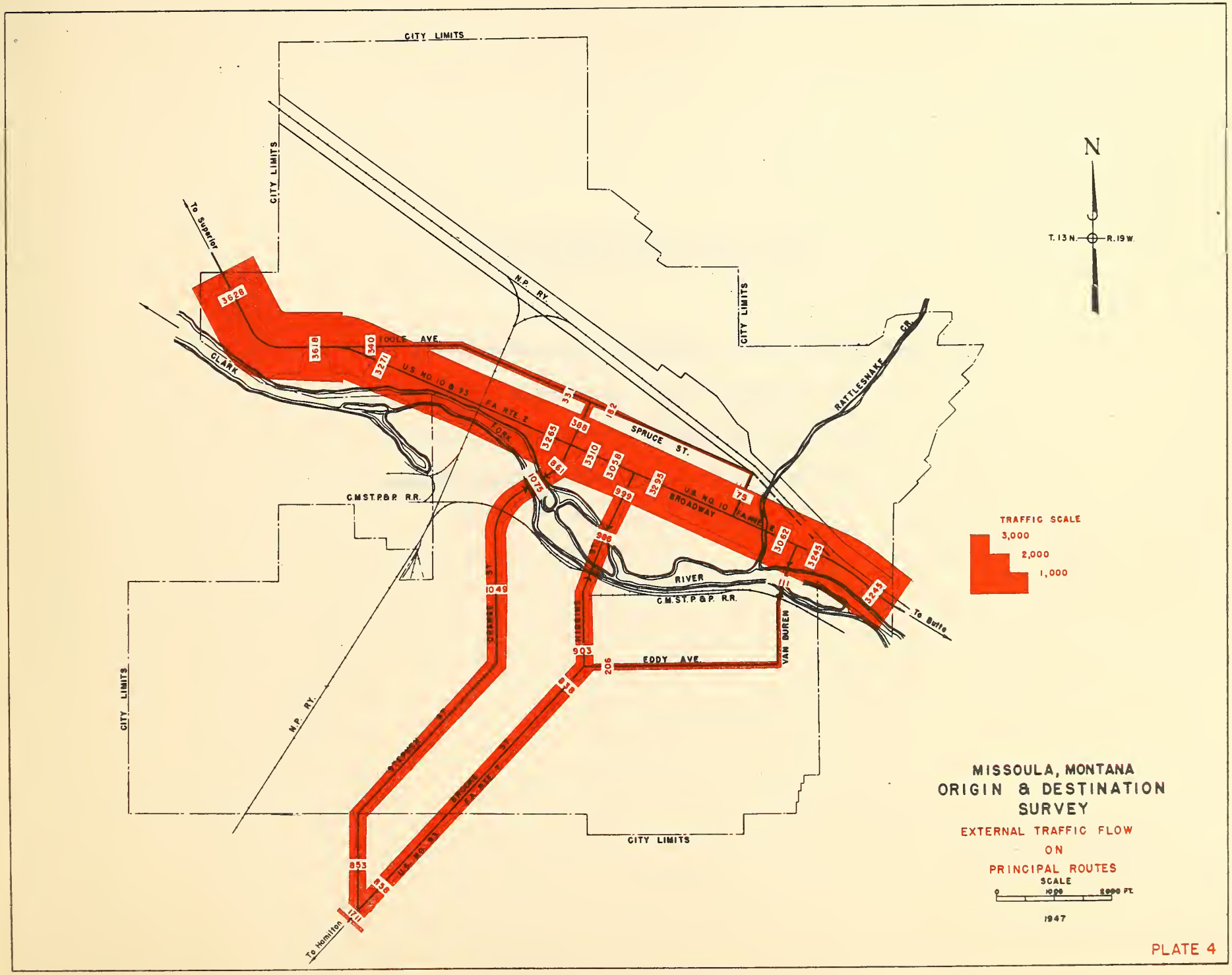

CITY LIMITS
CITY LIMITS
CITY LIMITS
CITY LIMITS
CITY LIMITS
N
T. 13 N.
R. 19 W.
To Superior
3628
5833
1141
TOOLE AVE.
4750
U.S. NO. 10 & 93
FA. RTE. 2
CLARK
FORK
2009
4749
2320
SPRUCE ST.
6018
6054
7679
7924
8978
7933
U.S. NO. 10
BROADWAY
FA. RTE. 2
1200
5921
C.M.ST.P.&P. R.R.
10805
6192
6590
RIVER
C.M.ST.P.&P. R.R.
2614
3245
To Butte
RATTLESNAKE CR.
6562
ORANGE ST.
MISSOULA
VAN BUREN
80.76
1673
EDDY AVE.
2436
N.P. RY.
N.P. RY.
STEPHENS ST.
BROOKS ST.
FA. RTE. 7
U.S. NO. 93
1811
1818
2025
To Hamilton
TRAFFIC SCALE
10,000
7,500
5,000
2,500
MISSOULA, MONTANA
ORIGIN & DESTINATION
SURVEY
TOTAL TRAFFIC FLOW
ON
PRINCIPAL ROUTES
SCALE
0
1000
2000 FT.
1947

PLATE 3

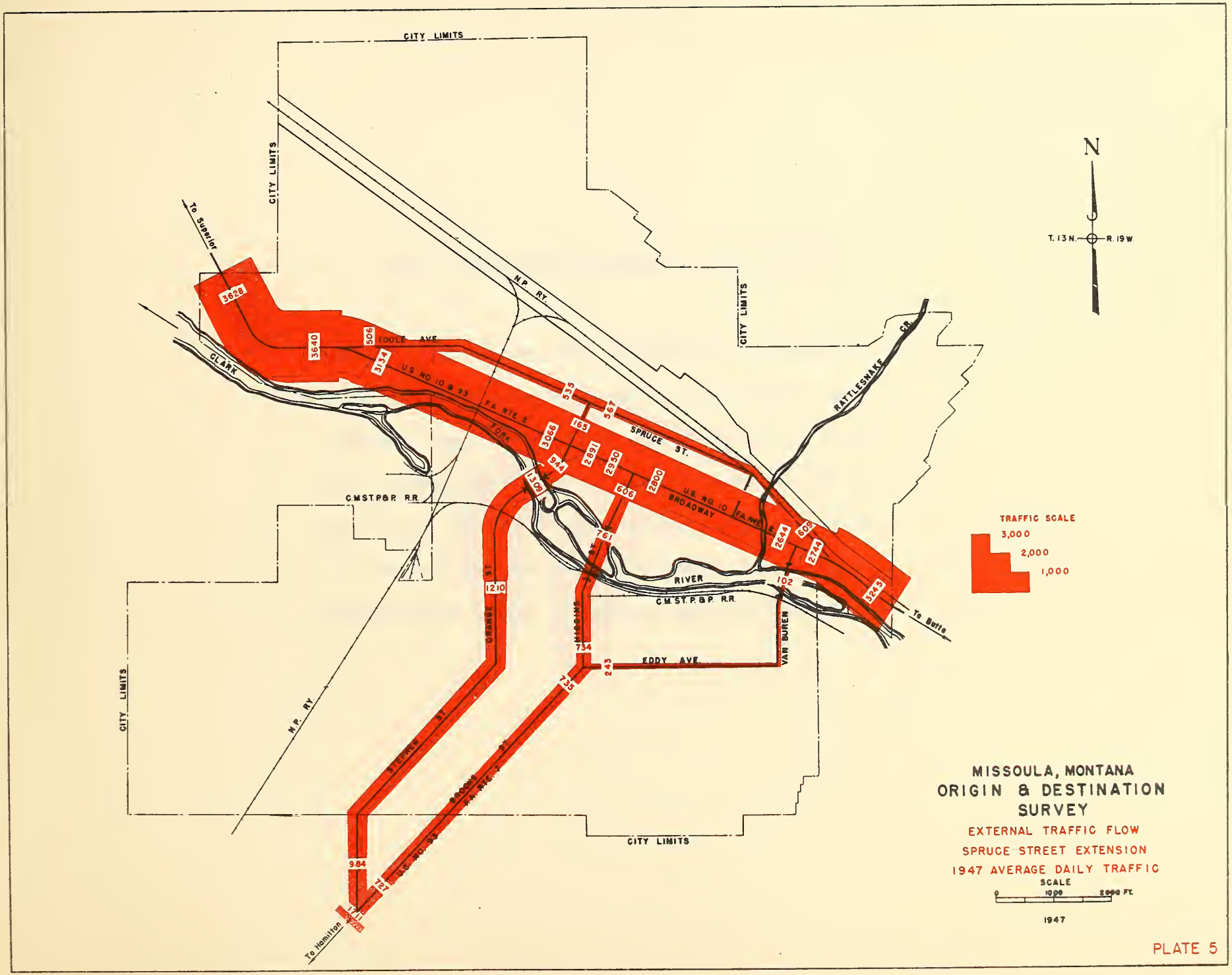
EXTERNAL TRAFFIC FLOW ON PRINCIPAL ROUTES

Plate 4 shows the flow of external traffic through Missoula on the principal streets. Only traffic passing through the three Origin and Destination Stations was used in preparing this map. The distribution was determined by analyzing the interviews taken at the three external stations.


CITY LIMITS
CITY LIMITS
CITY LIMITS
CITY LIMITS
CITY LIMITS
N
T. 13 N.
R. 19 W.
To Superior
3628
3618
340
3271
TOOLE AVE.
CLARK
U.S. NO. 10 & 93
FA RTE 2
FORK
N.P. RY.
351
182
SPRUCE ST.
3263
388
3310
3058
861
1075
988
3593
75
U.S. NO. 10
BROADWAY
FA RTE 2
RATTLESNAKE CR.
C.M.ST.P.&P. R.R.
926
3062
3245
3245
RIVER
C.M.ST.P.&P. R.R.
111
To Butte
1049
GERARD ST.
RIBBONS
903
206
EDDY AVE.
VAN BUREN
N.P. RY.
838
GRANT ST.
BRUCE ST.
FA RTE 2
U.S. NO. 93
853
838
1211
To Hamilton
TRAFFIC SCALE
3,000
2,000
1,000
MISSOULA, MONTANA
ORIGIN & DESTINATION
SURVEY
EXTERNAL TRAFFIC FLOW
ON
PRINCIPAL ROUTES
SCALE
0
1000
2000 FT.
1947
PLATE 4

1947 AVERAGE DAILY TRAFFIC FLOW

Plate 5 illustrates the probable flow of all external traffic through the city of Missoula if the Spruce Street extension were constructed and all trucks routed over the Orange Street Bridge.


CITY LIMITS
CITY LIMITS
CITY LIMITS
CITY LIMITS
CITY LIMITS
N
T. 13 N.
R. 19 W
To Superior
3628
3640
506
TOOLE AVE
3134
U.S. NO. 10 & 93
F.A. RTE. 2
CLARK
FORK
535
567
163
3065
944
2891
2950
506
2800
SPRUCE ST.
U.S. NO. 10
BROADWAY
F.A. NO. 2
2644
506
2744
3245
To Butte
RATTLESNAKE
CR.
N.P. RY.
N.P. RY.
C.M.ST.P.&P. R.R.
1309
761
RIVER
102
C.M.ST.P.&P. R.R.
1210
GRAND ST.
MISSOULA
734
243
EDDY AVE.
VAN BUREN
735
STEPHENS ST.
BROOKS
U.S. NO. 93
F.A. RTE. 2
984
727
To Hamilton
TRAFFIC SCALE
3,000
2,000
1,000
MISSOULA, MONTANA
ORIGIN & DESTINATION
SURVEY
EXTERNAL TRAFFIC FLOW
SPRUCE STREET EXTENSION
1947 AVERAGE DAILY TRAFFIC
SCALE
0
1000
2000 FT.
1947
PLATE 5

ESTIMATED 1965, AVERAGE DAILY TRAFFIC FLOW

Plate 6 illustrates the Estimated 1965 Average Daily Traffic Flow on Missoula's principal streets by use of traffic bands plotted to scale. Both external and internal traffic was used in preparing this illustration. The chart shows the probable flow of traffic in the city if the Spruce Street extension were constructed and all trucks were routed over the Orange Street Bridge.

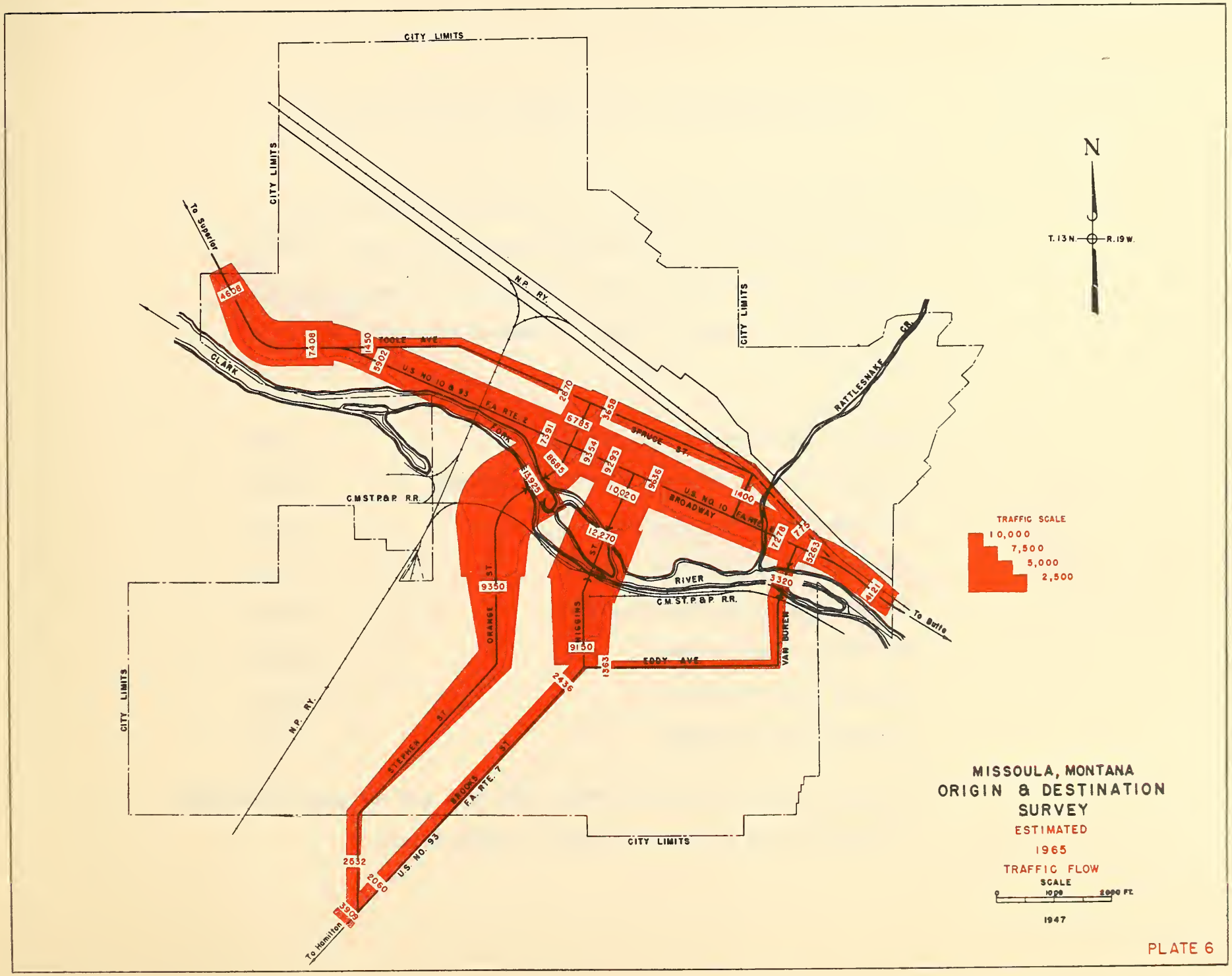

CITY LIMITS
CITY LIMITS
CITY LIMITS
CITY LIMITS
CITY LIMITS
N
T. 13 N.
R. 19 W.
To Superior
4668
7408
1450
5902
TOOLE AVE.
U.S. NO. 10 & 93
F.A. RTE. 2
CLARK FORK
N.P. RY.
2870
6785
3658
SPRUCE ST.
7591
8685
9354
9293
10,020
5836
U.S. NO. 10
BROADWAY
F.A. RTE. 2
1400
7278
7713
5263
4121
To Butte
RATTLESNAKE CR.
15,925
C.M.ST.P.&P. R.R.
12,270
RIVER
C.M.ST.P.&P. R.R.
3320
VAN BUREN
9350
ORANGE ST.
HIGGINS ST.
9150
1363
EDDY AVE.
2436
STEPHENS ST.
BEDORS ST.
F.A. RTE. 7
U.S. NO. 93
N.P. RY.
2632
2060
3903
To Hamilton
TRAFFIC SCALE
10,000
7,500
5,000
2,500
MISSOULA, MONTANA
ORIGIN & DESTINATION
SURVEY
ESTIMATED
1965
TRAFFIC FLOW
SCALE
0
1000
2000 FT.
1947

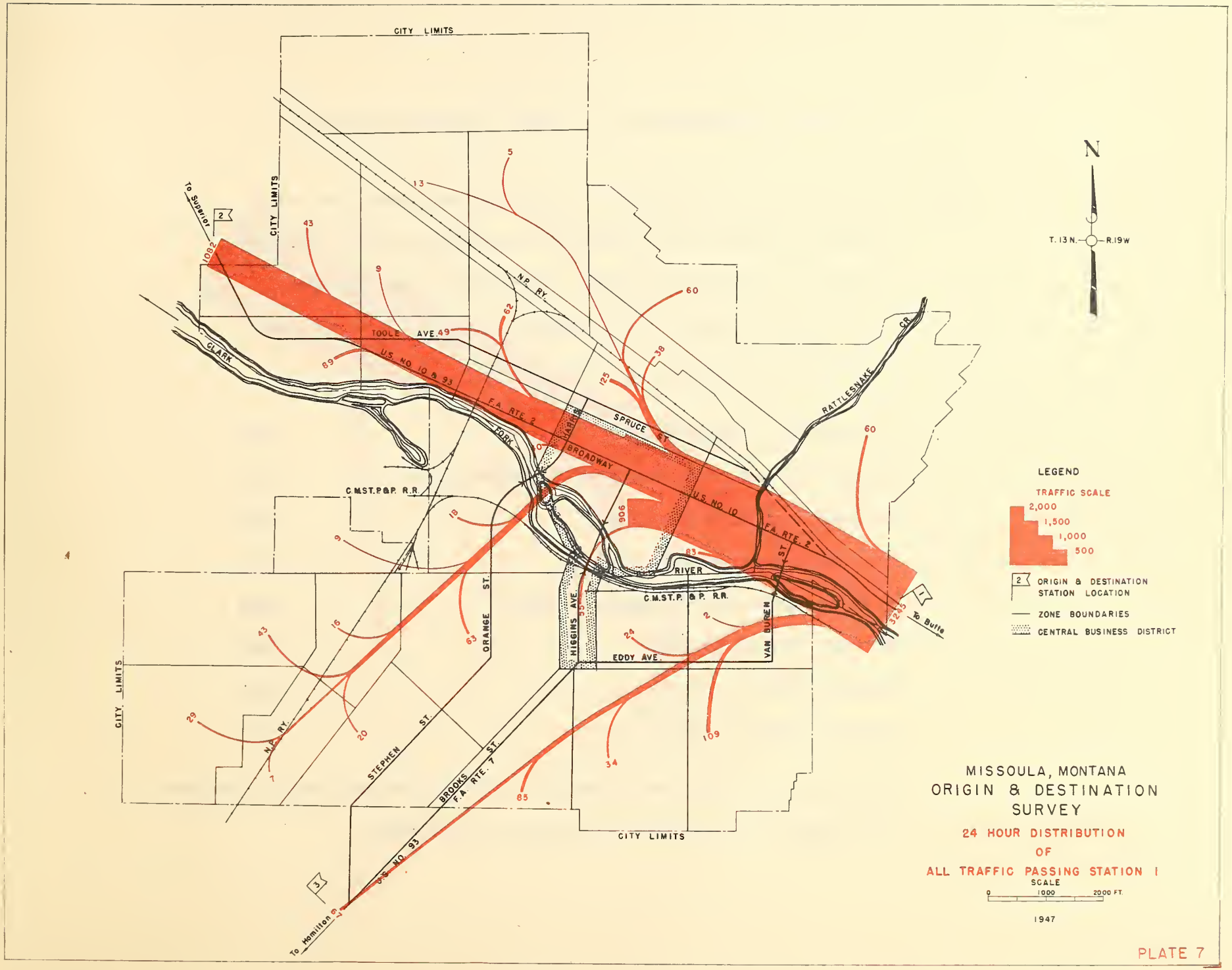
PLATE 6

24-HOUR DISTRIBUTION OF ALL TRAFFIC PASSING STATION NO. 1

Plate 7 illustrates the distribution to the internal zones and other external stations of all vehicles passing station No. 1 either entering or leaving the city. All traffic has been adjusted to an Annual Average for 1947. A summary of Station No. 1 follows:

Average Daily Traffic	3245
Percent of total external traffic interviewed	39.3
Percent Commercial vehicles	17.2
Percent Foreign vehicles	32.9
Percent Central business district	29.6
* Percent through traffic	35.4
Percent South of river	17.9
Percent North of tracks	5.4

* Includes both trucks and passenger cars that did not stop in the city or stopped only for gas, oil, food, or cold drinks.


CITY LIMITS
CITY LIMITS
CITY LIMITS
CITY LIMITS
To Superior
2
1092
43
13
5
9
N.P. RY.
60
62
TOOLE AVE.
49
89
U.S. NO. 10 & 93
F.A. RTE. 2
125
38
SPRUCE ST.
CLARK FORK
LARIMER
BROADWAY
U.S. NO. 10
F.A. RTE. 2
RATTLESNAKE CR.
60
C.M.ST.P.&P. R.R.
18
9
906
83
RIVER
C.M.ST.P. & P. R.R.
ORANGE ST.
HIGGINS AVE.
VAN BUREN ST.
EDDY AVE.
24
2
3245
1
To Butte
43
16
63
29
20
7
N.P. RY.
STEPHEN ST.
BROOKS ST.
F.A. RTE. 7
U.S. NO. 93
85
34
109
3
To Hamilton
N
T. 13 N.
R. 19 W
LEGEND
TRAFFIC SCALE
2,000
1,500
1,000
500
2 ORIGIN & DESTINATION STATION LOCATION
ZONE BOUNDARIES
CENTRAL BUSINESS DISTRICT
MISSOULA, MONTANA
ORIGIN & DESTINATION SURVEY
24 HOUR DISTRIBUTION
OF
ALL TRAFFIC PASSING STATION 1
SCALE
0 1000 2000 FT.
1947
PLATE 7

24-HOUR DISTRIBUTION OF ALL TRAFFIC PASSING STATION NO. 2

Plate 8 illustrates the distribution to the internal zones and other external stations of all vehicles passing station No. 2 either entering or leaving the city. All traffic shown has been adjusted to an annual daily average for 1947. A summary of Station No. 2 follows:

Average daily traffic	3628
Percent of total external traffic interviewed	37.5
Percent commercial vehicles	22.2
Percent foreign vehicles	36.3
Percent to central business district	32.4
* Percent through traffic	32.7
Percent South of river	18.7
Percent North of tracks	4.3

* Includes both trucks and passenger cars that did not stop in the city or stopped only for gas, oil, food or cold drinks.

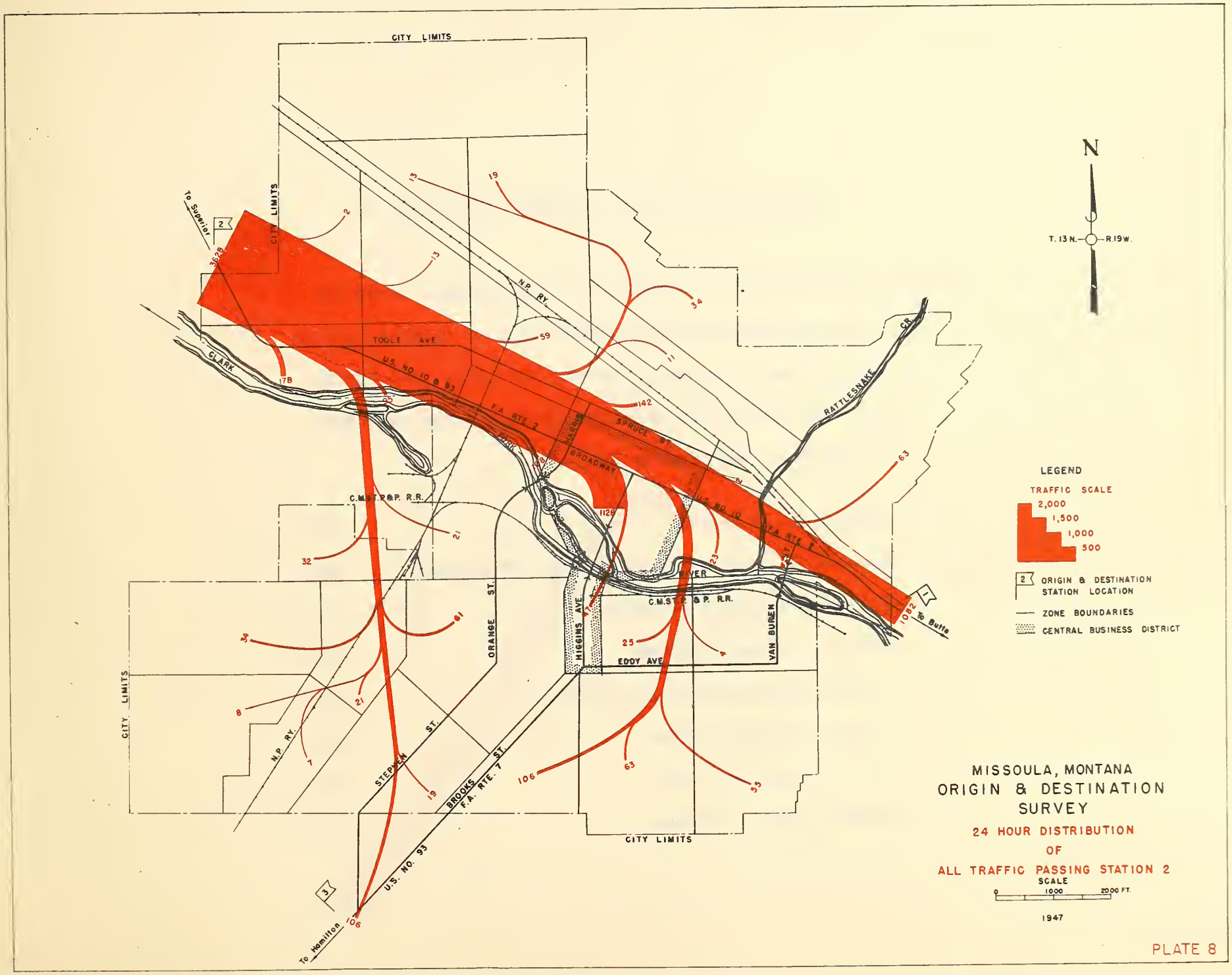

CITY LIMITS
To Superior
2
3628
CITY LIMITS
N.P. RY.
TOOLE AVE
U.S. NO. 10 & 93
F.A. RTE. 2
CLARK
178
142
SPRUCE ST.
BROADWAY
HARRIS
C.M.ST.P.&P. R.R.
1128
U.S. NO. 10
F.A. RTE. 2
RIVER
C.M.ST.P.&P. R.R.
RATTLESNAKE
CR.
1082
To Butte
ORANGE ST.
HIGGINS AVE.
EDDY AVE.
VAN BUREN
CITY LIMITS
N.P. RY.
STEPHEN ST.
BROOKS ST.
F.A. RTE. 7
U.S. NO. 93
CITY LIMITS
3
To Hamilton
106
N
T. 13 N.
R. 19 W.
LEGEND
TRAFFIC SCALE
2,000
1,500
1,000
500
ORIGIN & DESTINATION STATION LOCATION
ZONE BOUNDARIES
CENTRAL BUSINESS DISTRICT
MISSOULA, MONTANA
ORIGIN & DESTINATION SURVEY
24 HOUR DISTRIBUTION
OF
ALL TRAFFIC PASSING STATION 2
SCALE
0
1000
2000 FT.
1947

PLATE 8

24-HOUR OF ALL TRAFFIC PASSING STATION NO. 3

Plate 9 illustrates the distribution to the internal zones and other external stations, of all vehicles passing station No. 3 either entering or leaving the city. All traffic has been adjusted to an annual daily average for 1947. A summary of the station follows:

Average daily traffic	1771
Percent of total external traffic interviewed	45.4
Percent commercial vehicles	24.4
Percent foreign vehicles	13.9
Percent central business district	40.6
Percent through traffic	10.1
Percent North of river	67.5
Percent North of tracks	5.3

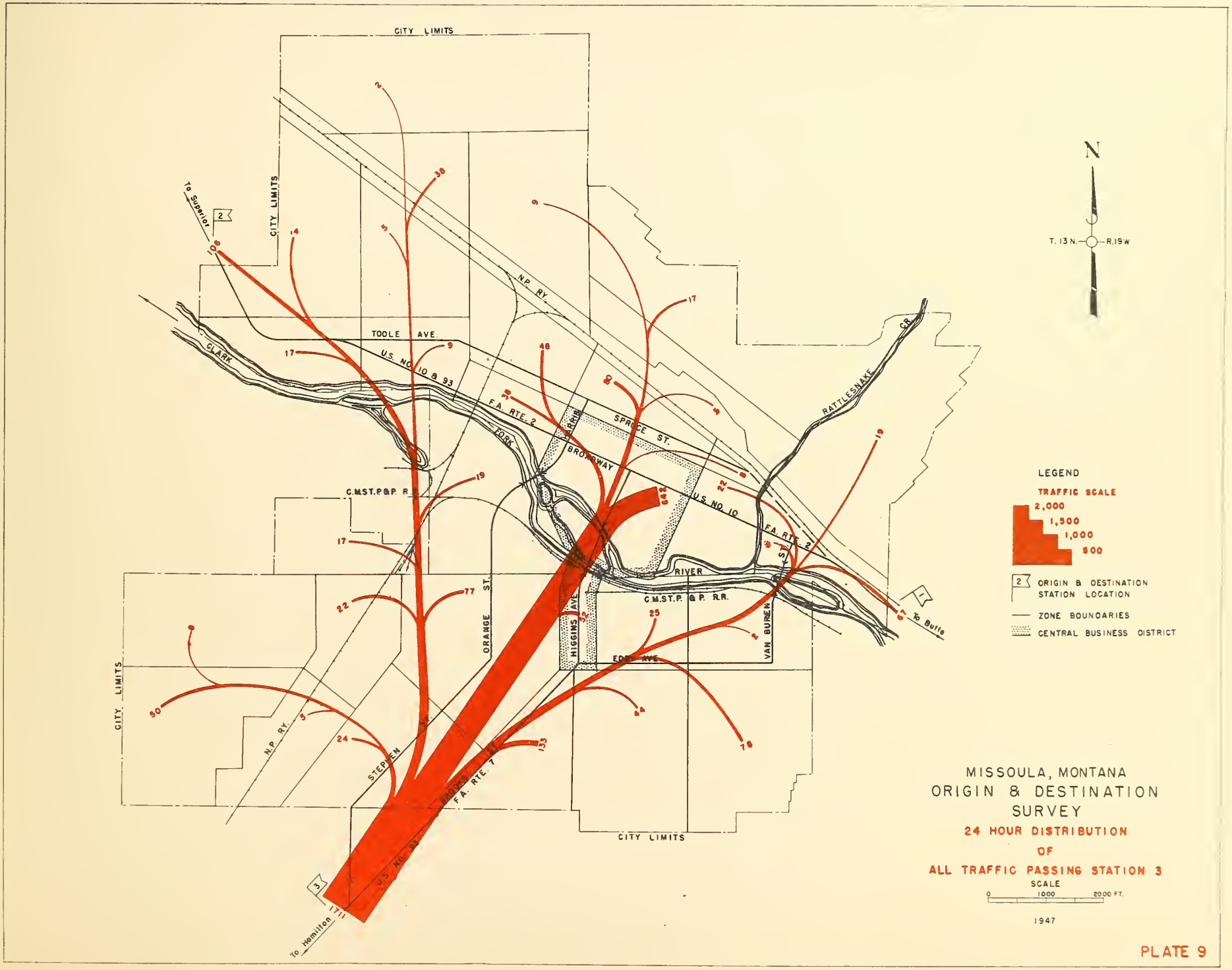

CITY LIMITS
To Superior
2
TOOLE AVE.
U.S. NO. 10 & 93
CLARK
FORK
F.A. RTE. 2
N.P. RY.
SPRUCE ST.
BROADWAY
C.M.ST.P.&P. R.
U.S. NO. 10
F.A. RTE. 2
RATTLESNAKE
CR.
RIVER
C.M.ST.P. & P. R.R.
HIGGINS AVE.
ORANGE ST.
VAN BUREN ST.
EDDY AVE.
To Butte
1
STEPHEN
F.A. RTE. 7
U.S. NO. 93
To Hamilton
3
N
T. 13 N.
R. 19 W
LEGEND
TRAFFIC SCALE
2,000
1,500
1,000
500
ORIGIN & DESTINATION STATION LOCATION
ZONE BOUNDARIES
CENTRAL BUSINESS DISTRICT
MISSOULA, MONTANA
ORIGIN & DESTINATION SURVEY
24 HOUR DISTRIBUTION
OF
ALL TRAFFIC PASSING STATION 3
SCALE
0
1000
2000 FT.
1947

PLATE 9